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ABSTRACT

Outreach projects are funded to disseminate effective early childhood service models for use with handicapped children. To accomplish this mission, this paper describes how to offer effective training programs to parents, community leaders, volunteers, allied professionals and paraprofessionals, and staffs of agencies that wish to replicate the outreach projects model. Each of the following considerations for working effectively with adults are examined in detail: (1) adult education philosophy, (2) andragogy, (3) assumptions about adult learning, (4) learning styles, (5) noncognitive factors that affect learning, (6) group process, and (7) elements of an ideal learning environment. The paper provides conceptual and theoretical bases upon which educational activities with adults can be developed. This background and knowledge is intended to help early childhood teachers plan and carry out training activities with adults. (Thirty-seven references are included.) (KC)

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Adult Education

Theory and Practice

by Reiko T. Sakata

Managing Editor Daniel Assael

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* * *

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Outreach projects are funded to disseminate effective early childhood service models. To accomplish this mission, outreach staffs must be able to offer effective training programs to parents, community leaders, volunteers, allied professionals and paraprofessionals, and staffs of agencies that wish to replicate the outreach project's model. To work effectively with adults, a trainer must consider:

- adult education philosophy
- andragogy
- assumptions about adult learning
- learning styles
- noncognitive factors that affect learning
- group process
- elements of an ideal learning environment

This paper examines each of these areas in detail and provides conceptual and theoretical bases upon which educational activities with adults can be developed. This background and knowledge will help you plan and effectively carry out training activities with adults.

ADULT EDUCATION PHILOSOPHY

Philosophy, defined by Webster (1983) as "the most general beliefs, concepts, and attitudes of an individual," guides the way teachers teach and trainers train. Elias and Merriam (1980) provide a lengthy discussion of four major adult education philosophies: liberal, progressive, behavioral, and humanistic. A summary of each of these philosophies follows.

Liberal Philosophy

An educator with a liberal philosophy attempts to lead people from information to knowledge to wisdom by stressing intellectual and moral education, spiritual knowledge, and aesthetics. Principles of behavior modification are viewed with suspicion; philosophy, religion, and the humanities are valued over the sciences. The teacher has a prominent role in the educational process and encourages the use of the lecture method and dialectic to gain knowledge and discover universal truths.

Progressive Philosophy

An educator with a progressive philosophy tends to emphasize vocational and utilitarian training, learning by experience, and problem-solving methods. The focus is on the personal needs, interests, and experiences of the learner. The needs assessment concept was a logical outgrowth of this philosophy. Although the progressive movement had a powerful influence on education and seemed to be very appropriate to adult learners, few adult educators adhere to this philosophy.

Behavioral Philosophy

An educator with a behavioral philosophy expects the learner to be very active and to assume the responsibility for learning. The teacher designs an environment which elicits desired behaviors. Accountability, especially as it relates to measuring changes in behavior, is imperative. Competency-based education, which is very effective in the education of adults, was a natural outgrowth of this philosophy. Programmed instruction, computer-assisted instruction, and contract learning are other teaching methods which grew out of this philosophy.

Humanistic Philosophy

The goal of a humanistic educator is "the development of self-actualizing individuals" (Elias and Merriam, 1980) and the development of the whole person with particular emphasis on the emotional and affective aspects of the personality. A humanistic educator believes that people have a natural tendency to learn and that learning will take place if a nourishing and encouraging environment is provided. The learner identifies his or her own needs, with assistance from the instructor if needed, and the teacher helps the student meet those needs. Motivation is held to be intrinsic, and evidence that learning has taken place is determined through self-evaluation. This philosophy has had a significant influence on education since the 1950s and is believed to hold considerable promise for adult education.

Few educators seem to hold exclusively to one philosophy. But, it is important to be aware of one's own dominant philosophy and to view it in light of that which is needed to successfully teach a certain group of

learners. There is no one best philosophy or one best teaching method. Effective adult educators take a contingency approach to teaching and adjust their approaches and styles as much as possible to meet the individual needs of the learners.

ANDRAGOGY

Andragogy is "the art and science of helping adults learn." The term was first used by Malcolm Knowles (1970), a leader in the field of adult education. Knowles coined the term andragogy because he believed that a distinction needed to be made between educating children (pedagogy) and educating adults (andragogy), since teaching and learning principles used with children were not necessarily appropriate for adults.

Prior to the 1920's, psychologists believed that human intelligence reached its peak during the late teen years and that little, if any, learning took place after that. Much of what was known about teaching and learning came from studies of children and experiments with animals. Principles of teaching and learning applicable to children were applied indiscriminately to adults.

In the 1920's, educators and researchers in the United States and Europe began to study learning characteristics of adults. One researcher, Edward Thorndike (1928) found that it was possible for adults to continue learning after age 20 and that any decrease in ability to learn was very slight and slow to occur. The discovery of evidence that adults were capable of learning gave rise to the adult education movement.

ASSUMPTIONS ABOUT ADULT LEARNING

According to Knowles (1970, 1978), there are four crucial assumptions that differentiate adults and children as learners:

- The adult's self-concept moves from dependency toward self-direction.
- The adult accumulates a growing reservoir of experience that becomes an increasing resource for learning.
- The adult's readiness to learn becomes oriented increasingly to the developmental tasks of his or her social roles.

- The adult's time perspective changes from one of postponed application of knowledge to immediacy of application. Accordingly, his or her orientation toward learning shifts from subject centeredness to problem centeredness.

The adult moves towards self-direction.

At birth, an infant depends on others for all of life's needs. As the child grows, he or she begins to experiment with independence. The child strikes out on his or her own, in different directions and in various ways. The child's dependent self-concept becomes increasingly self-directed as he or she grows to adulthood. And with this change in self-concept comes a need to be perceived by others as self-directed. This need can cause adults to resent learning situations in which they feel they are being treated as children instead of mature, responsible adults. In a training situation, however, temper efforts to meet this need:

> While we strive for independence, we also retain throughout life our dependency needs. We require the approval and support of others in order to preserve our sense of well-being. We accept leadership in areas where we lack experience or expertise. We need to ask for help when we've lost the way. Independence and autonomy are good. They help reduce our sense of powerlessness and improve our self-confidence and self-esteem. But dependence also has its uses; and so does interdependence -- the sharing of effort, responsibility, and rewards in the manner of athletes in team sports. When adult learners have too little autonomy, their dignity can be affronted, their motivation inhibited, and their pleasure in learning stifled. But learners suddenly confronted with more responsibility for their own learning than they expected or are used to usually respond with anxiety and, sometimes, withdrawal. (Smith, 1982, pp. 44-45)

The adult's life experiences are a valuable resource.

By adulthood, the individual has undergone many and varied experiences, has learned a great deal, and has functioned in many roles. Further, at any given point in time, an adult may be cast in more than one role. A person may be a principal, a board member, or a lay preacher while also assuming the role of a scout leader, a student, a wife, a father, a daughter, or a friend. Every person is unique -- no two persons can have the same life experiences.

Quantity and quality of experience have important implications for adult education. Recent studies of cognitive changes in adults (Botwinick, 1967 and Flavell, 1970) indicate that formal and informal life experiences prompt significantly different ways adults approach problems and organize their thinking. And, according to Knox (1977), a representative sample of adults in their fifties exhibits greater differences in cognitive style

than a representative sample of 20-year-olds. So, when there exists a great variety of experience among members of a given group of adults, a trainer must embrace more than one education method or approach. This notion was supported by Smith (1982), who wrote:

> The members of a group of adults may appear to be quite similar, but actually they are much more heterogeneous than a group of children. A class or discussion group made up of adults, even with similar job titles (nurses) or life roles (mothers), is likely to contain great variety in energy, extent of knowledge about what is to be learned, and motives for accepting or rejecting new ideas or procedures. This uniqueness affects one's preferences for modes of learning and learning environments and thus helps form the basis for the learning style concept. (p. 40)

The wise trainer will find ways to use the array of experiences that exists in any group of adults. The experiences of each member can serve as a resource to the entire group, and each member can benefit from the experiences of the others. There is another important reason for the trainer to use the experiences of individuals. Children derive their identities from external sources. But adults tend to view themselves in terms of their experiences: "An adult is what he has done" (Knowles, 1970, p. 44). If an adult's experience is devalued or ignored, he or she may feel rejected as a person (Knowles, 1978). This can have disastrous consequences in any learning situation.

Adults demonstrate a "readiness to learn."

While children arrive at readiness stages according to physiological and mental maturation, adults become ready to learn according to a desire or need to accomplish tasks.

According to Havighurst (1972), a developmental task is a task which arises at or about a certain period in the life of the individual. Successful achievement leads to happiness and to success with later tasks, while failure leads to unhappiness in the individual, disapproval by the society, and difficulty with later tasks. In adults, changing social roles necessitates the achievement or accomplishment of developmental tasks. The resultant "readiness to learn" leads in turn to a "teachable moment." Where possible, the trainer should try to coincide learning experiences with the learner's need to learn.

The adult orientation to learning is problem-centered.

Children are required to learn subject matter designed for postponed application. This subject-centered approach prepares children for subsequent steps in their education. Adult learners, however, are more pragmatic. Their orientation to learning is problem-centered. According to Tough (1971), "Most adult learning begins because of a problem or responsibility, or at least a question or puzzle, not because of a grand desire

for a liberal education" (p. 72). The adult tends to immediately apply that which he or she has learned. To an adult, time is limited and a precious commodity not to be wasted on the irrelevant. Time that an adult is willing to devote to learning must be used expeditiously.

LEARNING STYLE

Smith (1982) defined learning style as "the individual's characteristic ways of processing information, feeling, and behaving in learning situations" (p. 24). Individual adults differ in the ways they think, solve problems, process information, and memorize. Some analyze the whole into its parts while others take all the little pieces and synthesize them into a whole. Some adults handle abstractions easily; others may need to have more concrete information. Some may learn best when listening to the spoken word; others may learn more efficently through the written word and other visual materials.

Cognitive and noncognitive factors affect learning style. Noncognitive factors are unrelated to inherent learning ability, though they may help or hinder the performance of a learning task. Noncognitive factors that affect adult learning are examined later in this monograph.

Botwinick (1973) identified three cognitive factors, or mental characteristics, associated with competence or "true learning ability":

- organization -- the ability to organize material into manageable units;
- mediation -- the ability to relate two or more elements;
- rigidity and cautiousness -- the amount of flexibility necessary to make appropriate cognitive responses.

Individual mental characteristics are also cognitive factors and are considered to be " . . . potent variable(s) in students' academic choices and vocational preferences; in students' academic development through their school career; in how students learn and how teachers teach; and in how students and teachers interact in the classroom" (Witkin, 1973, p. 120).

For purposes of this discussion, the terms learning style and cognitive style are used interchangeably. Two different frameworks for cognitive style are examined below.

Field-Dependent and Field-Independent Styles

A major literature review found over two thousand studies of this dimension of learning (Witkin, Cox, and Friedman, 1976). Below are some characteristics of the field-dependent and the field-independent learner.

Field-Independent	Field-Dependent
Approaches tasks or situations in an analytical way, separating the parts from the background (Cross, 1976).	Approaches tasks or situations in a global way, seeing the whole instead of the parts (Cross, 1976).
Is more "inner directed" and less influenced by the rewards of their social surroundings and by their peers (Witkin, 1973).	Is more "other directed" and thus more sensitive to and reinforced by external evaluation, i.e., grades, praise, criticism (Witkin, 1973).
Tends to prefer taking responsibility for and organizing his or her own learning (Witkin and Moore, 1974).	Tends to prefer clear directions with the instructor taking more responsibility (Witkin and Moore, 1974).
Tends to appear cold and distant to others and to be individualistic (Osipow, 1969).	Likes to be physically close to others, demonstrates greater social sensitivity, and is more popular than field-independents (Cross, 1976).
Requires less external structure and feedback (Smith, 1982). Learns better when motivation is intrinsic (Witkin, 1973).	Prefers greater amounts of external structure, direction, and feedback (Smith, 1982).
Is better at analytical problem-solving and abstraction; tends to have a higher need for achievement (Cross, 1976; Kirby, 1979).	Is more comfortable with learning and problem-solving through collaboration (Cross, 1976).
Tends to choose careers in mathematics and the sciences -- physics, biology, engineering (Witkin, 1973).	Tends to choose careers that involve people and human relations such as social services, counseling, teaching (Witkin, 1973).

A number of cross-cultural studies suggest that cognitive style is determined largely through socialization. In American culture, the tendency to foster dependence and nurturing in women and achievement and independence in men may well account for the rather consistent finding that men tend to be more field-independent, more analytical, than women (Cross, 1976).

Knowledge of the field-dependent and field-independent dimensions of learning can be important to trainers as they structure learning activities for adults. It is important to know if people prefer to work alone or in groups, or if they prefer to be directed or to take responsibility for structuring at least part of their own learning. According to the literature, people who choose careers in teaching and other social services tend to be field-dependent learners.

Four Styles of Adult Learning

Ward (1982) developed an interesting framework to categorize individuals by their preferred style of learning. His framework is based on earlier work by Kolb (1977) and Hagberg and Leider (1978). Ward identified four learning style profiles: idealistic, pragmatic, realistic, and existentialistic.

Idealistic adult learners are thinkers and reasoners and are independent enough to resent restrictive, structured, instructor-centered training programs and to appreciate self-paced learning modules, group discussion, self-appraisal and evaluation, goal setting, and collegial interaction. Ward's idealistic learner enjoys identifying and discovering the skills necessary to do a job. Typical comments from this type of learner might be: "Don't treat me like a child"; "There are better ways to do things than the ways we were told in this training session."

Pragmatic learners usually must be convinced of the applicability of an approach, technique, or methodology. Since pragmatic learners tend to have significant difficulty transferring skills from one setting to another, they prefer to be trained in their own environment, where they can see for themselves if something works. They learn best with hands-on experience and training designed to their situations. Typical comments from a pragmatic learner are: "Show me how it will work in my own setting"; "I'll believe it when I see it."

Realistic learners tend to be direct and efficient. Overly sentimental human relations activities are wasted on this group; their only desire is to "get on with it." This may be due to a lack of interpersonal skills. Structure and programmed instruction with explicit goals and well-defined outcomes appeal to this group. Computer-assisted instruction, "how-to" workshops, and competency-based training are very effective approaches as well. A realistic learner is most apt to say: "Quit beating around the bush, and just let me know what needs to be done"; "Show me how, and let me do it."

Existentialistic learners believe that there is no such thing as one best or right way and will consider and explore their own and others' strengths and abilities in order to achieve desired results. Sensitivity,

respect for the opinions of others, and human relations activities (such as team building) are appreciated, and learning is best accomplished with inductive reasoning. Training for this type of learner should be based on an extensive needs analysis and clearly defined outcomes and expectations; the learner should be allowed to identify and develop his or her own particular strategy for accomplishing the objectives. A typical comment from this type of learner might be: "What you're telling me makes sense. But, I have some ideas that are equally good, and I'll bet others here do to."

Few individuals fall precisely into one category. However, close analysis should reveal greater strength in one category than in the others. Two commercial inventories that can help identify learning styles are Kolb's Learning Style Inventory (1977) and Hagberg and Leider's Excursion Styles Inventory (1978). However, when a formal assessment is not feasible or desirable, a general knowledge of adult learning characteristics and needs can help the observant trainer spot particular learning styles. The success of a given learning experience or activity may depend on how closely the instructional design matches the learning styles of the adults in the group.

NONCOGNITIVE FACTORS THAT AFFECT LEARNING

Noncognitive factors are not related to inherent learning ability, though they may help or hinder learning. Included in this category are physiological changes in the senses and affective factors such as meaningfulness and anxiety.

Physiological Changes

The aging process causes physiological changes in all humans. Some changes affect the amount of new material that can be learned and the speed at which it can be learned. And, these changes are not restricted to the very old. Physiological capabilities and learning abilities peak at about age 20 and then decline with advancing age (Dickinson, 1973). Most training situations will involve adults of varying ages, and the trainer must be aware of conditions that may require accommodations.

Vision. Researchers estimate that as much as 85 percent of all learning occurs through sight (Dickinson, 1973, Lovell, 1980). Most people have their best vision at age 18 years. A gradual decline takes place over the next 20 years, and a sharp drop occurs between ages 40 and 55 years. The sharp decrease then tapers to a slower but continued deterioration. The pupil of a 50-year-old admits half as much light as does the pupil of a 20-year-old. So, the middle-aged and older adult needs a well-lighted setting for training and learning. Also, the speed at which the eye makes focal adjustments decreases with age, so it is often difficult for a middle-aged or older adult to rapidly shift focus from something close to something far away. A middle-aged or older trainee seated in the back of a room may find

it difficult to alternate between taking notes and looking up at an image projected on a screen at the front of the room. Suggestions for trainers to use to accommodate this need, and other needs discussed below, are found in the "Optimum Conditions for Adult Learning" section.

Hearing. Hearing is also affected by aging. Gradual decreases in hearing acuity are generally not noticed by the individual until the loss becomes considerable. Maximum hearing acuity usually occurs between the ages of 10 and 15 years and gradually decreases until about age 65 years. The most rapid decline takes place between the ages of 50 and 60 years. Statistics indicate that half of 60-year-olds, compared to only an eighth of 20-year-olds, have defective hearing (Dickinson, 1973). Hearing loss can cause auditory discrimination problems which may be compounded by a reduced auditory reaction time. Older adults often have difficulty comprehending rapid speech, even when there is little or no loss of hearing.

Reaction Time. In learning, time is required to perceive the stimulus, to transmit it to the brain, and to respond with an action. In adulthood, we perceive more slowly, think more slowly, and act more slowly than we did in our youth. But with proper attention, older adults can still learn at a reasonable pace. Knox (1977) found that "when they can control the pace, most adults in their forties and fifties have about the same ability to learn as they had in their twenties and thirties" (p. 422). Trainers can help by presenting material in an unhurried fashion, repeating key material, providing a stress-free environment, and allowing time for reflection.

Other Noncognitive Factors

Meaningfulness. In general, material a learner considers meaningful is learned and retained longer than material the individual considers meaningless (Dickinson, 1973). It is the learner, not the trainer, who must find the material meaningful. A trainer may consider it important to spend time discussing how an assessment instrument was developed, but the trainees may feel that it is more important to learn to administer the instrument.

Anxiety. Some degree of anxiety, channelled appropriately, can help the learning process. Though more often, anxiety hinders learning. Unpleasant childhood school experiences may cause anxiety later when the adult is placed in a learning situation. According to Smith (1982), adults who lack basic skills are four times more likely to drop out of an educational activity than are other adults. When trainers work with undereducated parents and volunteers, a first step may be to attempt to overcome the trainees' childhood school experiences and their own doubts about their ability to learn. An appeal to learn in order to help their own child may prove to be strong motivation for parents. Motivation is a significant factor when working with undereducated adults, since there is little if any interest in knowledge for its own sake (Cross, 1976).

Professionals also may feel anxious in a training situation. Smith (1982) found that though professionals, as a rule, do not doubt their learning ability, "their participation and learning are affected by the need to avoid revealing professional incompetence in public" (p. 52). The trainer

must create a climate that minimizes anxiety and fosters confidence and positive thinking.

GROUPS, GROUP PROCESS, AND ADULT LEARNING

A trainer must recognize and respond to each individual's style of learning while recognizing group characteristics and applying basic principles of group process. This section presents some general theories that can acquaint the reader with the subject and provide a few guidelines to use with groups of learners. Readers who want to know more are referred to Porter and Mohr (1982), Schein (1969, 1982), and Shaw (1976).

Growth Stages

Groups typically evolve through predictable stages (Weber, 1982). During the first stage, members are polite and superficial as each seeks to establish safe patterns of interaction by choosing a role which is acceptable to himself or herself and to the group. For example, a person may choose to play the role of an aggressive leader, a humorous tension reliever, or a quiet listener.

During the second stage, members seek to establish their power and influence within the group. Each member has some need to control and influence, but the need varies in degree from person to person. Challenges to designated and emerging leaders will occur as members work through their needs to control. The group's ability to function depends on the resolution of each individual's need to exercise control and influence people and events.

In the third stage, the group becomes a cohesive unit and begins to establish norms, roles, and processes it will use to accomplish tasks. Members begin to care for each other, and functional relationships develop. Leadership becomes established, and the group prepares to tackle its tasks.

Some groups go through the first two stages quickly; other groups take more time. If a group does not successfully negotiate the third stage, the group will repeat the first two stages then attempt the third stage again. This cycle tends to repeat itself as the group accepts new tasks.

A trainer can learn a great deal by observing trainees in a group. By carefully observing communication patterns and task or maintenance behaviors, and by being cognizant of the underlying emotional issues of identity, power, and control, it is possible to determine what is going on in a group and what can be done to help.

Task or Maintenance Behavior

When members feel comfortable in the group (Stage 3), they can turn

their attention to matters other than the emotional issues of identity, power, and control. While accomplishing a task, members of a group demonstrate a variety of behaviors that serve different functions and are essential to the group's progress. Schein (1969, 1982, p. 73) has identified the following behaviors which help groups accomplish tasks:

- Initiating: proposing tasks or goals; defining a group problem; suggesting a procedure or ideas for solving a problem.
- Seeking information or opinions: requesting facts; seeking relevant information about group concerns; requesting a statement or estimate; soliciting expressions of value; seeking suggestions and ideas.
- Giving information or opinion: offering facts; providing relevant information about group concern; stating a belief about a matter before the group; giving suggestions and ideas.
- Clarifying and elaborating: interpreting ideas or suggestions; clearing up confusions; defining terms; indicating alternatives and issues before the group.
- Summarizing: pulling together related ideas; restating suggestions after the group has discussed them; offering a decision or conclusion for the group to accept or reject.
- Testing consensus: asking to see whether or not the group is near a decision; sending up a trial balloon to test a possible conclusion.

Usually, some people in any group will assume these roles and functions. If some functions are not being performed, the trainer can intervene and help by taking on the role or indicating the need for someone in the group to do so. The trainer should limit his type of intervention, however, so the group does not become too dependent on the trainer.

Schein (1969, 1982, pp. 73-74) also describes the following behaviors which help members of a group maintain good relationships with each other:

- Harmonizing: attempting to reconcile disagreements; reducing tension; getting people to explore differences.
- Gate Keeping: helping to keep communication channels open; helping others to participate, suggesting procedures that permit sharing remarks.
- Encouraging: being friendly, warm, and responsive to others; indicating by facial expression or remark the acceptance of others' contributions.
- Compromising: admitting error; modifying position for the sake of group cohesion or growth.

- Setting and testing standards: testing if the group is satisfied with its procedures or suggesting new procedures; pointing out explicit or implicit norms that have been set to make them available for testing.

Groups usually have a task leader and a maintenance leader; rarely does one individual serve both functions. In fact, various members of a group may assume one function or another at different times.

A trainer should be alert to the presence or absence of these maintenance behaviors in the group. For example, if no one is serving a gatekeeping function, and some members of the group are having a difficult time being heard, then it may be necessary for the trainer to intervene.

Communication

It is easy to observe the way members communicate. Whenever a group member speaks up, a trainer can put a checkmark next to that person's name and then can clearly see who talks the most and who talks the least. Frequently, the same people do most, if not all, the talking, robbing the group of potentially valuable contributions from its more reticent members. By using the checkmark strategy, the trainer can identify less talkative members and help them participate (e.g., "What do you think, Mary?" or, "Frank, you've had experience of this sort. Perhaps you'd like to share it with the group.").

The trainer can also help less aggressive members when they are interrupted by more talkative members. Persons of high rank, status, or power tend to feel free to interrupt persons of lower status (Schein, 1982), but the trainer can intervene in situations of this kind. The trainer can identify high status members of the group by observing who looks at whom while talking. Most members will look at the leader when speaking or looking for direction. Some people will look at those who tend to offer agreement and support. Some may look at the person or persons most likely to present opposition.

Communication can also be nonverbal. Body language can often provide clues to what is happening to people beneath the surface (Fast, 1970; Henley, 1977, Mierenberg & Calero, 1971). Following is a brief list of nonverbal behavior clues:

Openness: open hands, unbuttoning coat, uncrossed legs.
Evaluation: chin stroking, chewing on glasses, pacing.
Cooperation: sitting on edge of chair, leaning forward, frequent eye contact.
Confidence: finger "steepling," hands clasped behind back.
Defensiveness: arms and/or legs crossed, fists clenched.
Secretiveness: no eye contact, sideways glance.
Frustration: running hands through hair, rubbing back of neck, handwringing.
Nervousness: clearing the throat, hands covering mouth while speaking, jingling coins in pocket.

OPTIMUM CONDITIONS FOR ADULT LEARNING: A SUMMARY

Differences in age, education, experience, socioeconomic level, interests, needs, motivation, and cognitive ability influence the way an adult learns. The effective trainer must be able to read these differences in a group and respond appropriately. The effective trainer must also be a good communicator, a good observer, and have a good working knowledge of the principles of adult learning and group process.

To create an ideal learning environment that will address the needs of a diverse groups of adult learners, consider these following factors:

- general learning principles
- adult learning characteristics
- learning styles
- noncognitive factors

General Learning Principles

Material that is meaningful to the learner will be learned more readily and remembered longer than nonmeaningful material. Material to be learned should be organized and presented in a logical sequence beginning with simple, concrete concepts and moving on to more complex, abstract concepts. Diagrams, charts, pictures, and other visuals may help those with poor reading skills and those who learn more readily through the visual modality. Learners should have ample opportunity to practice skill development tasks. Videotaped or live demonstrations can help prepare the learner for hands-on practice.

Encouraging the immediate application of new material can help establish meaningfulness and recall. Immediate feedback of a learner's performance should be followed by reinforcement of new learning and new behavior. This can be readily provided by programmed or computer-assisted instruction, but should also be provided by the trainer.

Active participation by the learners should be encouraged where possible. Role plays, simulations, discussion groups, and participant presentations encourage a learner's active participation.

Variety is another important ingredient in instructional designs. The use of only one technique throughout an entire workshop will probably bore learners and prove ineffective. At least three different techniques should be used in a given session, and a change of technique should occur every twenty or thirty minutes (Dickinson, 1973).

Adult Learning Characteristics

Many learning principles apply to children and adults. However, four learning characteristics apply specifically to adults:

- Adults tend to desire self-direction. However, the need varies in degree among individuals.
- The adult's life experiences are a valuable resource and should be used whenever appropriate. The trainer should consider a learner's previous experiences when selecting teaching methods and materials.
- Adults demonstrate a readiness to learn which is tied to developmental tasks. An adult will be most open to learning when he or she needs to accomplish a task for work or personal progress.
- Adults have a problem-centered orientation to learning. Material should address a current problem. Adults want to take what they have learned and apply it.

Learning Styles

Individuals have preferred ways of processing information. These learning styles have significant educational implications. The trainer must recognize each style and select appropriate instructional modes, materials, activities, and reinforcement. Table 1 shows characteristics of the six learning styles discussed earlier. Table 2 shows training methods for field-dependent and field-independent styles and for Ward's (1983) four learning styles.

Table 1. Characteristics of Six Learning Styles

Characteristics	Field Independent	Field Dependent	Idealistic	Pragmatic	Realistic	Existentialistic
Goals						
Self-defined	X		X			X
Externally defined		X		X	X	
Structure & organization						
Self-provided	X		X			X
Provided externally		X		X	X	
Orientation						
Theoretical	X		X			X
Practical		X		X	X	
Conceptualization						
Abstract	X		X			X
Concrete		X		X	X	
Autonomy						
More	X		X			X
Less		X		X	X	

Table 2
Training Methodologies

Training Methodologies	Field Independent	Field Dependent	Idealistic	Pragmatic	Realistic	Existentialistic
Audiovisual ("How to" procedures)		X			X	
Brainstorming	X		X			
Behavior modeling		X			X	
Case Study	X		X			
Computer-assisted instruction		X			X	
Contingency-based competency design						X
Critical incident	X		X			
Debate	X		X			
Demonstration & practice		X		X	X	
Discovery	X		X			
Discussion		X	X			
Goal setting	X		X			X
Goals identification		X			X	
Group Dynamics		X				X
Individualized Instruction	X			X		X
Inductive Reasoning						X
Interactive Video instruction			X			
Interpersonal games		X				X
Job-related games		X		X		
Job-specific training materials		X		X		
Lecture	X		X			
Participant presentation		X				X
Problem solving	X		X			
Programmed instruction		X			X	
Quality Circles			X			X
Question/answer	X				X	
Reading assignments	X		X		X	
Role play	X	X	X	X	X	
Simulation		X		X	X	
Testing/feedback		X			X	

Noncognitive Factors

Physiological changes in vision and hearing occur as people age. The following suggestions from Dickinson (1973, pp. 30-33) should be considered when planning training activities.

To accommodate learners with possible and actual visual problems:

- Provide adequate light according to the ages of the learners. The light source should be constant, without flicker, and the learners shouldn't face direct light. When possible, reduce or eliminate glare.
- If visual attention to fine detail is required, equip rooms or work stations with supplementary light sources that can be operated by the individual.
- Watch for signs of visual performance problems such as fatigue, loss of attention, or frequent shifts in the position of reading materials.
- Try to avoid requiring students to make sudden or frequent changes of focus. Help them locate a desired point of focus.
- Arrange seats close to the instructor or illustrations so that everyone can see clearly.
- Charts, diagrams, or pictures should be large, with maximum color contrast. Allow sufficient time for the presentation of visual materials so that the students don't feel too rushed.
- Chalkboards or large paper pads used by the instructor should allow maximum contrast. A white plastic board with black lithographic chalk provides the best contrast.
- Only important and relevant items should appear on a chalkboard. Use simple words or phrases and large, legible writing or printing.
- Reading materials should be printed on low gloss paper in large type, double spaced, and with good contrast.
- The amount of reading expected should be reduced for older students.

To accommodate learners with possible or actual hearing difficulties:

- Try to eliminate or reduce outside noises, such as air conditioning or heating elements, which may distract or interfere with hearing.
- Remain in one position as much as possible so that the listeners can observe gestures which may provide clues to meaning.
- Speak slowly, distinctly, and clearly.

- Talk directly to the learners in a conversational manner; use simple words and short sentences.

- Watch the faces of the learners for clues as to whether or not they can hear. Ask someone at the back of the room to call attention if he or she suspects that someone can't hear.

- Questions directed to the instructor from individuals in the group should be repeated for all to hear.

- Use a chalkboard or some other device to show new or unfamiliar words visually. The use of an overhead projector will enable you to remain facing the listeners for those who need to lip-read.

- Small rooms reflect less sound than do large rooms.

- Learners with hearing loss will respond better and feel less isolated or threatened in small groups than they will in large groups.

- Group discussions for older students should be slower paced than discussions conducted for younger adults. Frequent summaries will help the older members to keep up. Pause often to allow ideas to correlate.

Many adults are anxious in a new learning situation. Undereducated adults who have experienced frustration, anxiety, and failure in previous learning situations can have particular problems. For parents of handicapped children, an appeal to strong family feelings may provide motivation. An accepting and supportive psychological climate where freedom of expression exists without fear of ridicule (Knowles, 1970) should help to quell any anxieties that adult learners may have. Feelings of success or accomplishment will also help to build self-concept and self-confidence. Vocabulary in speech and written material should be adjusted for adults with limited education. Audiovisual and visual aids should be used frequently along with many opportunities for active participation.

The physical environment can help set the tone. Adult learners require adult-sized furnishings and equipment. Informal seating arrangements and some pictures on the walls help create a comfortable setting.

Groups, Group Process, and Communication

Groups evolve through three predictable stages. During the first stage, group members seek to establish roles and safe patterns of interaction. During the second stage, members establish individual power and influence within the group. During the third stage, members develop a caring for one another as the group becomes a cohesive unit and prepares to work on tasks. The time spent at each stage varies with each group and all groups do not evolve through all three stages.

While groups are working on a task, the trainer should look for task and maintenance behaviors. These behaviors need to be present for the group to function smoothly. Task behaviors help the group accomplish tasks and include such behaviors as giving and seeking information, clarifying and summarizing ideas and issues, and testing for concensus. Maintenance behaviors maintain good relationships between the members and include such behaviors as harmonizing, gate-keeping, encouraging, compromising, and standard-setting.

In each group there is usually a task leader and a maintenance leader. The same individual rarely serves both functions. Other members of the group also need to assume task or maintenance functions at appropriate times, although not necessarily in a leadership capacity. The trainer should be alert to the absence of any of these functions within the group and take whatever steps are necessary to help the group.

Much can be learned about a group from observing the ways in which members communicate. Talkative, overly talkative and nontalkative members can be identified and helped to participate. Body language gives clues to how people may be feeling beneath the surface and may help the trainer determine when people are bored, nervous, or needing help.

CLOSING

Outreach project staffs are faced with the challenging task of training adults with a wide range of ages, experience, educational and socio-economic backgrounds, and motivations. To design effective training programs, the trainer must consider:

- adult education philosophy
- andragogy
- assumptions about adult learning
- learning styles
- noncognitive factors that affect learning
- groups and group process

The information in this paper will help trainers meet the educational and training needs of adult learners.

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